

## Title (en)

Thermally controlled external cavity tuneable laser

## Title (de)

Abstimmbarer Laser mit thermisch geregelter externen Resonator

## Title (fr)

Laser accordable à cavité externe à commande thermique

## Publication

**EP 2273630 B1 20120118 (EN)**

## Application

**EP 10178660 A 20040630**

## Previously filed application

04740481 20040630 EP

## Priority

- EP 04740481 A 20040630
- EP 2004007102 W 20040630

## Abstract (en)

[origin: EP2273630A1] The present invention relates to an external-cavity tuneable laser including a gain medium (2) and a tuneable mirror (8), wherein at least the tuneable mirror is in thermal contact, with a thermally conductive platform (10). The tuneable mirror lays substantially horizontally on the thermally conductive platform significantly thereby improving the thermal contact of the tuneable mirror with the platform. The laser beam from the gain medium is directed onto the tuneable mirror, which is mounted substantially horizontally with respect to the thermally conductive platform, by means of a deflector (6) that deflects the beam or a large part of it towards one of the principal surfaces of the tuneable mirror. The resulting laser cavity is therefore a folded cavity. The thermally conductive platform is preferably thermally coupled to TEC (11) that provides thermal control for the platform. In a preferred embodiment, the deflector is a beam splitter that deflects part of the incoming light and transmits the remaining part. A beam splitter as deflector a more compact laser assembly can be envisaged. According to a preferred embodiment of the invention, the portion of light transmitted through the beam splitter forms the output laser beam. In other words, the external-cavity laser outputs a laser beam on the side of the wavelength selective elements (the tuneable mirror and, if any, the channel grid), i.e., on the side of the front facet of the laser diode. With this laser design, a collimating lens to collimate the output laser beam is not necessary.

## IPC 8 full level

**H01S 5/14** (2006.01)

## CPC (source: EP US)

**H01S 5/02325** (2021.01 - EP US); **H01S 5/141** (2013.01 - EP US); **H01S 3/105** (2013.01 - EP US); **H01S 3/1062** (2013.01 - EP US); **H01S 5/0064** (2013.01 - EP US); **H01S 5/02251** (2021.01 - EP US); **H01S 5/02415** (2013.01 - EP US); **H01S 5/02438** (2013.01 - EP US); **H01S 5/02476** (2013.01 - EP US); **H01S 5/028** (2013.01 - EP US); **H01S 5/0654** (2013.01 - EP US); **H01S 5/0683** (2013.01 - EP US); **H01S 5/1039** (2013.01 - EP US)

## Citation (examination)

- US 2005023573 A1 20050203 - GOVIL PRADEEP K [US], et al
- EP 1239560 A2 20020911 - FURUKAWA ELECTRIC CO LTD [JP]
- US 5712723 A 19980127 - LEE JIN-HO [KR]
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- WO 2004070893 A2 20040819 - GWS PHOTONICS LTD [IL], et al

## Designated contracting state (EPC)

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PL PT RO SE SI SK TR

## DOCDB simple family (publication)

**WO 2006002663 A1 20060112**; AT E488891 T1 20101215; AT E542277 T1 20120215; AU 2004321231 A1 20060112; CA 2571699 A1 20060112; CA 2571699 C 20151124; CN 1977431 A 20070606; DE 602004030166 D1 20101230; EP 1761980 A1 20070314; EP 1761980 B1 20101117; EP 2273630 A1 20110112; EP 2273630 B1 20120118; JP 2008504701 A 20080214; JP 5031561 B2 20120919; US 2008298402 A1 20081204; US 8483247 B2 20130709

## DOCDB simple family (application)

**EP 2004007102 W 20040630**; AT 04740481 T 20040630; AT 10178660 T 20040630; AU 2004321231 A 20040630; CA 2571699 A 20040630; CN 200480043483 A 20040630; DE 602004030166 T 20040630; EP 04740481 A 20040630; EP 10178660 A 20040630; JP 2007518458 A 20040630; US 63111104 A 20040630